

SUBMISSION INSTRUCTIONS NO. 14

ANNUAL GROUNDWATER MONITORING REPORT FOR REGULATED SANITARY, CDD, AND INDUSTRIAL LANDFILLS

I. APPLICABILITY OF INSTRUCTIONS – These instruction are applicable to all solid waste facilities which conduct groundwater monitoring under the requirements contained in the Virginia Solid Waste Management Regulations (VSWMR), promulgated by the Virginia Waste Management Board, effective December 18th, 1988, as amended.

II.GENERAL – By no later than March 1st of each calendar year, solid waste facilities which monitor groundwater under the requirements of Part 300 of the VSWMR are required to submit to the Department, an annual report summarizing groundwater monitoring activities. The annual report shall at a minimum, demonstrate compliance with the groundwater monitoring requirements for solid waste landfills or propose such actions as may be needed to bring the facility into compliance with applicable portions of the VSWMR.

The annual report is intended to be a stand-alone technical document. While the Department recognizes that some forms of the technical information within these instructions may have been submitted under separate cover as part of Permit applications or major or minor amendments, a summary of such technical information shall still be included in the annual report.

The annual report is not intended to contain other facility topics or technical information more properly submitted to the Department under separate cover, such as an Alternate Source Demonstration, a request to establish a Subset of Wells, a Wetlands demonstration, a Petition for Variance from groundwater sampling requirements, or any part of a major or minor amendment to a facility's Permit.

III. REPORT FORMAT – The annual report submitted to the Department shall follow the general format outlined in Table 1 of these instructions. The table provides a suggested format that addresses all required areas and a consistent format for facilities follow. Annual report submissions that are found to lack sections that are required by the regulations shall be considered incomplete. The Department recognizes there may be some instances where a facility's technical data may require additional sections to be added to those listed in these submission instructions as a means of more fully characterizing the technical data available and conclusions derived thereof. These instructions set no limit on the number or topical content of such additional annual report sections as long as the information included directly pertains to that required of an annual report as outlined in these instructions.

The administrative and technical content required for each section of the annual report is briefly described below.

A. Cover Page – Provide the following information:

- Calendar Year for which the report applies
- Landfill Name
- Landfill location
- DEQ Permit #
- Date report submitted

B. Table of Contents – Specify the order and organization of the report sections. A recommended format is provided in Table 2

C. Annual Report Summary – Provide a brief summary of the following technical findings:

- Groundwater flow direction (and rate, if applicable).
- Status of groundwater monitoring program.
- Results of the statistical analysis.
- Any required actions.

D. Site Description – Provide the following site-specific information listed below. The information may be presented as text, in a table-format, or as bulleted items. However, the organization of the information should follow the section headings of Table 2 of these submission instructions:

1. Site Background Information

- List DEQ Permit #
- Identify landfill type (i.e. Sanitary, CD&D, etc.)

2. Aquifer Recognition (9 VAC 20-80-300.E.2.b.(1)(d))

- Identify the nature of the uppermost aquifer (i.e. overburden, saprolite, bedrock)
- Identify the nature of the groundwater table (i.e. confined, semi-confined, unconfined)

3. Groundwater Monitoring History (9 VAC 20-80-300.E.2.b.(1)(e))

- Identify when facility entered detection or phase I monitoring
- Identify (if applicable) when facility entered assessment or phase II monitoring
- Identify (if applicable) when Groundwater Protection Standards were established by Permit amendment
- Identify under what program the facility monitored groundwater during the previous year

4. Variances or Other Director Approvals (9 VAC 20-80-300.E.2.b.(1)(f))

- Identify if the facility monitored groundwater under an approved Variance Petition or well subset which supercedes any Regulatory requirement
- Give date (if applicable) of Variance approval or well subset

5. Monitoring Well Network (9 VAC 20-80-300.E.2.b.(1)(d))

- Identify all upgradient and downgradient monitoring wells within the compliance network

E. Hydrologic Evaluation – Include language (based on the review of potentiometric surface information) stating that the monitoring well network did (or did not) function as designed during the previous calendar year and had the ability to determine the facility's impact (if any) on the quality of groundwater in the uppermost aquifer.

For any upgradient monitoring well determined to be impacted by the landfill, or any downgradient monitoring well, which because of a change in groundwater flow direction or internal damage, has become unable to function as designed, a proposal for replacement well installation shall be provided.

A calculation of the groundwater flow rate must be provided, derived from site specific data collected during the prior calendar year. Complete calculations used to determine the groundwater flow rate shall be provided in Appendix B of the annual report.

Units of flow rate must correspond to the units of map scale used on the site plan drawing (i.e. english – english, or metric - metric). Flow rate data should be presented in a “distance/per year” measurement.

F. Statistical Evaluation – Define the methods by which the analytical data were statistically compared noting the level of significance and confidence level at which the data was evaluated. This section must also state how the facility has treated any censored data, outlier data points, missing data, and data below the laboratory quantitation limits. The section must also clearly state what type of verification sampling strategy has been employed (if applicable).

This section must state whether or not there has been any statistically significant increases (SSI's) in any organic or inorganic compound noted during the previous calendar year. Constituents identified at concentrations considered SSI's must be listed in table format with the corresponding monitoring well and sampling event date shown.

G. Conclusions – Provide a summary of findings corresponding to the content included in the Executive Summary section. This section must also include a summary of recommended actions the permittee will undertake during the upcoming calendar year.

H. Figures – This section must contain, at a minimum, copies of the site plan drawing showing potentiometric surface contours. The Site Plan drawing must include topographic land surface contours, permanent structures, surface water features, a bar scale, north arrow, facility boundary, waste management unit boundary, all monitoring wells – labeled with ID #, and groundwater flow direction arrows for those sites located above all aquifer types other than fractured bedrock.

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